1. A method of modeling a tool path in an additive manufacturing process enabling multi-material parts to be fabricated without material interference, the method comprising the steps of:

separately modeling each material as a single or multiple solid part under the assumption that multiple materials or voids are not present;

ordering the parts from the outermost geometry to the innermost geometry; and

performing Boolean operations on the ordered parts to calculate the final volume for each part.

2. The method of claim 1, wherein all of the steps are carried out using a CAD system limited to single-material designs.

3. The method of claim 1, wherein the tool path is a spiral-in, spiral-out, arbitrary direction raster path, or a combination thereof.

4. The method of claim 1, further including the step of reflecting the geometries to accommodate overhang or undercut features.

5. The method of claim 1, further including the step of embedding commands as appropriate to accommodate closed- or open-loop control over the fabrication process.

6. The method of claim 1, further including the steps of:

generating multiple tool paths; and

merging the toolpaths into a single toolpath file.